



**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Koichiro NAKATANI

Group Art Unit: 3748

Application No.: 10/614,903

Examiner: D. Tran

Filed: July 9, 2003

Docket No.: 115914

For: EXHAUST EMISSION CONTROL APPARATUS OF INTERNAL COMBUSTION  
ENGINE AND METHOD THEREOF

**REQUEST FOR RECONSIDERATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In reply to the June 30, 2004 Office Action and the November 3, 2004 personal interview, the period for reply extended two months by the attached Petition for Extension of Time to November 30, 2004, reconsideration of the above-identified application is respectfully requested. Claims 1-18 are pending.

Applicant appreciates the courtesies extended by Examiner Tran to Applicant's representative during the November 3, 2004 personal interview. The personal interview is summarized below and thus constitutes Applicant's record of the interview.

Claims 1-18 were rejected under 35 U.S.C. §102(b) over Deeba et al. (Deeba), U.S. Patent No. 6,105,365. The rejection is respectfully traversed.

Deeba fails to disclose an exhaust emission control apparatus or method that temporarily decreases the flow rate of the exhaust gas while supplying a reducing agent through a reducing agent supply valve so as to execute a control of the flow rate of the

exhaust gas flowing through an NO<sub>x</sub> catalyst in accordance with a value indicating a state of the exhaust gas flowing through the NO<sub>x</sub> catalyst, the value being variable upon supply of the reducing agent through the reducing agent supply valve, as recited in independent claims 1 and 10.

The apparatus and method of claims 1 and 10 are advantageous in that a value indicating the state of the exhaust gas is continuously updated during the supply of the reducing agent. Deeba fails to disclose this feature because Deeba merely supplies the reducing agent without taking into account the current state of the exhaust gas or the current effect of the reducing agent within the exhaust gas.

Deeba discloses an apparatus wherein a CPU 50 is capable of receiving signals from various sensors in order to record and control the operation of the separating means 20 and the reductant injector means 30 and 32 (col. 5, lines 58-61). The control of the separator means 20 and the injector means 30 and 32 can be achieved with all, some or none of the signals generated by the various sensors (col. 5, lines 62-65). For example, the flow of gas exhaust 15 into the streams 22 and 24 can be based on a pre-set timing sequence (col. 6, lines 1-3). As another example, when the estimated amount of adsorbed NO<sub>x</sub> reaches a certain level, the flow can be decreased and a suitable amount of reductant can be injected to regenerate the trapping material and reduce the NO<sub>x</sub> to N<sub>2</sub> (col. 6, lines 15-18).

As such, while Deeba may control the flow rate of exhaust gas flowing through the pollutant adsorption means 40 and 42 in accordance with a value (i.e., time) indicating a state of the exhaust gas flowing through the pollutant adsorption means 40 and 42, this value is not variable upon the supply of reductant through the injector means 30 and 32. For example, Deeba controls the exhaust gas flowing through the pollutant adsorption means 40 and 42 in accordance with a pre-set timing sequence. After reductant is injected by the injector means

30 and 32, the pre-set timing sequence does not vary upon a supply of the reductant through the injector means 30 and 32.

During the personal interview, the Examiner asserted that when the absorbed NO<sub>x</sub> reaches a certain level, the flow rate of the exhaust gas through the pollutant adsorption means 40 and 42 is controlled (i.e., lowered) in accordance with a value (i.e., a NO<sub>x</sub> level) indicating a state of the exhaust gas (i.e., an amount of NO<sub>x</sub> in the exhaust gas) flowing through the pollutant adsorption means 40 and 42. Although the amount of NO<sub>x</sub> may indicate a state of the exhaust gas and may be used to initially lower the amount of exhaust gas flowing through the pollutant adsorption means 40 and 42, Deeba does not control a flow rate of the exhaust gas in accordance with a NO<sub>x</sub> value that is variable when the reductant is supplied from the injector means 30 and 32. The NO<sub>x</sub> value is fixed in Deeba. As such, Deeba suffers deficiencies in that a real-time feedback control of the exhaust gas flow rate is not performed. Conversely, claims 1 and 10 recite a value that is variable upon the supply of the reducing agent through the reducing agent supply valve.

In view of the foregoing, Deeba fails to disclose all of the features recited in claims 1 and 10, as well as the additional features recited in the dependent claims. It is respectfully requested that the rejection be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-18 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff  
Registration No. 27,075

Scott M. Schulte  
Registration No. 44,325

JAO:SMS/sxb

Date: November 18, 2004

Attachment:  
Petition for Extension of Time

**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

<p><b>DEPOSIT ACCOUNT USE AUTHORIZATION</b> Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
---